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THE PLANT DISEASE REPORTER

Issued By

Division of Mycology and Disease Survey

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

Volume XXV Number 9

May 15, 1941

The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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THE PLANT DISEASE SURVEY

DIVISION OF MYCOLOGY AND DISEASE SURVEY

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The development of apple scab in Indiana is reported by R. C. Baines, page 274.

April weather, page 275.

CHECK LIST REVISION

Freeman Weiss

GLIRICIDIA (LEGUMINOSAE)

GLIRICIDIA spp. Trees or shrubs of tropical America, especially G. SEPIUM (Jacq.) Steud., grown for ornament.

Cercospora gliricidiae Syd., leaf spot. P. R.
Corticium koleroga (Cke.) Höhn., thread blight. P. R.

GORDONIA (THEACEAE)

GORDONIA ALATAMAHA Sarg. (Franklinia a. Marsh), a small deciduous tree formerly native in Georgia, now found only in cult. as an ornamental; and G. LASIANTHUS (L.) Ellis, LOBLOLLY-BAY, a flowering evergreen shrub of Growth Regions 29, 30; also planted for ornament.

Cytospora gordoniae Berk., on flower stalks. S. C.
Meliola cryptocarpa Ell. & Mart., black mildew. Fla., La.
Mycosphaerella gordoniae Cke., on leaves. Ga.
Phyllosticta gordoniae Ell. & Mart., leaf spot. Fla.

GOUANIA (RHAMNACEAE)

GOUANIA spp. Shrubs or vines of tropical America, sometimes planted for ornament.

Catacaumella gouaniae F. L. Stevens, black mildew. P. R.
Irenopsis tenuissima F. L. Stevens, black mildew. P. R.
Puccinia gouaniae Holw., rust (0, I, II, III). West Indies and Central America.
P. invaginata Arth. & Johnston, rust (II, III). Fla., West Indies.

GOULDIA (RUBIACEAE)

GOULDIA spp. Tropical shrubs or trees, several kinds of which are planted as ornamentals in Hawaii.

Amazonia asterinoides (Wint.) Theis., black mildew. T. H.
Asterina gouldiae Stevens & Ryan, black leaf spot. T. H.
Cercospora sp., leaf spot. T. H.
Dendrophoma gouldiae Stevens & Plunkett, on leaves. T. H.
Enthalopycnidium gouldiae F. L. Stevens, on leaves. T. H.

GOULDIA--Continued

Meliola kaduae F. L. Stevens and M. sandwicensis Ell. & Ev., black mildew. T. H.
Mycosphaerella kaduae Stevens & Young, on leaves. T. H.
Pluriporus gouldiae Stevens & Ryan, black leaf spot. T. H.
Septoria gouldiae Stevens & Young, and S. hawaiiensis Stevens & Plunkett, leaf spot. T. H.
Sphaeropsis gouldiae Stevens & Plunkett, on leaves. T. H.
Trichopeltis reptans Speg., on leaves. T. H.

GRAPTOPHYLLUM (ACANTHACEAE)

GRAPTOPHYLLUM HORTENSE Nees. Shrub of Polynesia, grown in tropical America for ornament.

Gloeosporium sp. (?Glomerella cingulata (Ston.) Spauld. & Schrenk, anthracnose. P. R.
Rosellinia bunodes (Berk. & Br.) Sacc., root rot. P. R.

GREVILLEA (PROTEACEAE)

GREVILLEA spp., especially G. ROBUSTA A. Cunn. SILK-OAK, trees or shrubs of Australia, grown in far South as shade trees, and under glass for ornament.

Asterina globifera Ell. & Ev., black leaf spot. T. H.
Botryosphaeria ribis Gross. & Dug., on branches. T. H.
Cephaleuros virescens Kze., algal spot. Fla.
Diplodia sp. (? Physalospora rhodina (Berk. & Curt.) Cke.), die-back, gum disease. Fla.
Phymatotrichum omnivorum (Shear) Dug., root rot. Ariz.

GYMNOCLADUS (LEGUMINOSAE)

GYMNOCLADUS DIOICA (L.) Koch, KENTUCKY COFFEETREE. Growth Regions 19, 21, 22, 23, 24, 25, 27.

Amerosporium subclausum Ell. & Kell., on fallen leaves. Kans.
Cercospora gymnocladi Ell. & Kell., leaf spot. North Central States.
Gloeodes pomigena (Schw.) Colby, on branches. Ind.
Marssonina sp., leaf spot. Nebr.
Phyllosticta gymnocladi Tehon & Daniels, leaf spot. Ill.
Phymatotrichum omnivorum (Shear) Dug., root rot. Okla., Texas.
Polyporus pulchellus Schw., wood rot. Ind., Mich.

GYMNANTHES (EUPHORBIACEAE)

GYMNANTHES LUCIDA Sw., CRABWOOD. Small tree of S. Fla., and West Indies.
Meliola gymnanthicola F. L. Stevens, black mildew. P. R.
Strigula complanata Nyl., P. R.

HALESIA (STYRACACEAE)

HALESIA spp. especially H. CAROLINA L. (H. tetraptera L.), SILVERBELL. Shrubs or small trees (H. MONTICOLA (Rehd.) Sarg. is large) of Growth Regions 25, 27, 28, 29, 30; much cultivated as ornamentals, Zones IV and V.

Cytospora halesiae Ell. & Ev., on branches. W. Va.
Diaporthe beckhausii Nit. (D. halesiae Ell. & Ev.) and D. tetraptera Ell. & Ev., on branches. W. Va.
Lophiotrema halesiae Fairm., on bark. N. Y.
Phoma halesiae Fairm:, on twigs. N. Y.
Polyporus halesiae Berk. & Curt. (?P. adustus Willd. ex Fr.), wood rot. Ga.
Sirococcus halesiae Ell. & Ev., on branches. W. Va.

HAMAMELIS (HAMAMELIDACEAE)

HAMAMELIS spp., especially H. VIRGINIANA L. WITCH-HAZEL. Shrubs or small trees (H. MACROPHYLLA sometimes large) of Growth Regions 21, 22, 23, 24, 25, 26, 27, 28, 29; also H. JAPONICA Sieb. & Zucc. and H. MOLLIS Oliv., of Japan and China, cult. as ornamentals in Zone V and southward.

Cercospora hamamelidis Ell. & Ev., on leaves. Fla. (A nom. nud.)
Daldinia concentrica (Bolt. ex Fr.) Ces. & DeNot., on wood. Cosmopolitan.
Dermatella hamamelidis (Pk.) Durand, on bark. Pa., W. Va.
Diplodia hamamelidis Fairm., on branches. N. Y.
Fomes scutellatus (Schw.) Cke., wood rot. Widespread.
(Gloeosporium hamamelidis Cke.): Phyllosticta h.
Gonatobotryum maculicola (Wint.) Sacc., leaf spot. N. H. to W. Va. and Wis.
Graphium hamamelidis Van Hook, on leaves. N. Y. to Ind. and Tenn.
Haplographium apiculatum Pk., on leaves. Ind., N. Y.
Hendersonia foliorum Fckl., var. hamamelidina Fairm., on leaves. N. Y.
Hymenochaete agglutinans Ell., on trunk. Va.
Leptosphaeria hamamelidis Fairm., on branches. N. Y.
Monochaetia desmazierii Sacc., leaf spot. Va. to Ga. and Tenn.
Mycosphaerella sp., leaf spot. W. Va.
Phyllactinia corylea Pers. ex Karst., powdery mildew. Mich. Wis.
Phyllosticta hamamelidis (Cke.) Martin, leaf spot. Conn. to Miss., Tenn. and Wis.
P. paviae Ell. & Ev., Ill.
Physalospora obtusa (Schw.) Cke., on branches. Widespread.
Podosphaera biuncinata Cke. & Pk., powdery mildew. New England to Ill. and southward.
Polyporus semipileatus Pk., P. gilvus (Schw.) Fr., P. pulchellus Schw., wood rot.

HAMAMELIS--Continued

Ramularia hamamelidis Pk., leaf spot. N. Y. to W. Va., Okla. and Wis.
Valsa ambiens Pers. ex Fr. on branches. Cosmopolitan.

HAMELIA (RUBIACEAE)

HAMELIA spp., especially H. ERECTA Jacq., SCARLET-BUSH. Evergreen shrubs or small trees of tropical America including S. Fla.; cult. for ornament.

Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Meliola psychotriae Earle, black mildew. Canal Zone.
Uredo hameliae Arth., rust (II). P. R.

HARDENBERGIA (LEGUMINOSAE)

HARDENBERGIA (KENNEDIA) spp. Ornamental woody vines of Australia, grown in S. Calif., and under glass.

Heterodera marioni (Cornu) Goodey, root knot.

HEDERA (ARALIACEAE)

HEDERA HELIX L., ENGLISH IVY. Evergreen woody vine in numerous horticultural forms, cult. in Zone V and southward.

Camarosporium hederae Ell. & Ev., on stems. W. Va.
Cladosporium brunneolum Sacc., on leaves. Calif.
Colletotrichum trichellum (Fr.) Duke (C. gloeosporioides var. hederae Pass., C. hedericola Laub., Vermicularia trichella Fr.), anthracnose. General.
Diplodia vulgaris Lév., on stems. Conn., Va., S. C.
Erysiphe cichoracearum DC., powdery mildew. Okla.
Gloeosporium hedericolum Maubl., on leaves. N. Y.
Glomerella cingulata (Ston.) Spauld. & Schrenk, on leaves. Md.
Phyllosticta concentrica Sacc., leaf spot. Widespread. P. hederaecola Dur. & Mont., Conn. to N. J., Miss.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Physalospora obtusa (Schw.) Cke., on stems. Md.
Phytomonas hederae (Arnaud) Burkholder & Guterman, leaf spot. N. Y. to Ga., Ill., Wash.
Ramularia hedericola Heald & Wolf, leaf spot. Texas.
Rhizoctonia solani Kühn, damping off. Conn.
Sphaeropsis hederae Ell. & Ev., on stems. W. Va.
S. hedericola (Speg.) Sacc. N. Y.
(Vermicularia trichella Fr.): Colletotrichum trichellum

HEVEA (EUPHORBIACEAE)

HEVEA BRASILIENSIS PARA RUBBER TREE. Indigenous to Brazil; cult. in the East Indies, Malaya and Ceylon as the commercial source of rubber, occasionally in the U. S. for ornament. Because of the present interest in rubber culture in the Caribbean region, all the available pathological records for this area are summarized here though commercial culture of Hevea has been practically restricted to Barbados and Trinidad. Plantation culture in British and Dutch Guiana was largely abandoned because of leaf disease caused by Dothidella ulei. A detailed pathological survey of Hevea in the Amazon Valley was published in U. S. D. A. Dept. Bull. 1380. The name SIPHONIA RIDLEYANA Cook has been recently proposed as appropriate and taxonomically correct for this species.

Cephaleuros virescens Kze., green scurf (algal spot).
Ceratostomella fimbriata (Ell. & Hals.) Elliott, moldy rot. Costa Rica.
Corticium salmonicolor Berk. & Br., pink disease, thread blight.
Cytospora sp., on branches, ? dieback. Trinidad.
Diplodia theobromae (Pat.) Nowell, on branches, ?dieback (Conidial stage of Physalospora rhodina)
Dothidella ulei P. Henn., South American leaf disease. Costa Rica, Panama, Trinidad.
Glomerella cingulata (Ston.) Spauld. & Schrenk, leaf spot. Fla.
Guignardia heveae Frag. & Cif., on leaves. Dom. Rep. (G. heveae Syd., in the Philippines, has priority).
Helminthosporium heveae Petch, bird's-eye spot. Fla., Honduras.
Phomopsis sp., dieback. Fla., Trinidad.
Phyllosticta heveae Zimm., brown leaf blight. Trinidad, Hawaii.
Physalospora rhodina (Berk. & Curt.) Cke., on branches. Costa Rica.
Phytophthora palmivora Butl. (P. faberi Maubl.), bark canker, leaf fall, pod disease. Mexico, Trinidad.
Polyporus lignosus Klotzsch (?P. microporus Sw. ex Fr.), wet root rot. Trinidad.
P. zonalis Berk., wood rot.
Rosellinia bunodes Berk. & Br., root rot.
Sphaeropsis heveae Frag. & Cif., Dom. Rep.

HIBISCUS (MALVACEAE)

HIBISCUS spp. Only the arborescent forms included here, especially H. MUTABILIS L., COTTON ROSEMALLOW (Confederate-rose), native of China, planted in the far South; H. ROSA-SINENSIS L., CHINESE HIBISCUS, widely cult. in semi-tropical regions; H. SYRIACUS L., SHRUB-ALTHAEA, ROSE-OF-SHARON, cult in Zone V and southward; and others cult. in Hawaii and the West Indies.

HIBISCUS--Continued

Alternaria tenuis Nees, leaf spot. Ind.
Botryosphaeria ribis var. chromogena Shear et al., on branches. T. H.
B. hibisci (Schw.) Sacc., La., S. Car.
Camarosporium lyndonvillae Fairm., on twigs. N. Y.
Cephaleuros virescens Kze., green scurf. P. R.
Cercospora hibisci Tr. & Earle, leaf spot. Ala., Okla., Texas. C. hibiscina Ell. & Ev., P. R.
Choanephora infundibulifera (Curry) Sacc., on leaves; blossom blight. Fla.
Clitocybe tabescens (Scop. ex Fr.) Bres., root rot. Fla.
Colletotrichum hibisci Pollacci, dieback. Fla., Texas.
Coniothyrium hibisci (Berk.) F. Tassi, on twigs. S. C.
Corticium koleroga (Cke.) Höhn. (C. stevensii Burt), thread blight. Fla., P. R.
C. microsclerotia Weber, web blight. Fla.
Diaporthe eres Nit., on twigs. N. J., S. C.
Diaporthe sp., T. H.
Diplodia hibiscina Cke. & Ell., on branches. N. J.
D. theobromae (Pat.) Nowell T. H.
Fusarium lateritium Nees (F. berkelei Mont.), on twigs, ?dieback. Fla., La., N. Y.
(Hendersonia collapsa Cke. & Ell.): Stagonospora c.
Heterodera marioni (Cornu) Goodey, root knot. Miss., Texas, T. H.
Kuehneola malvicola (Speg.) Arth., rust (II, III). Gulf States, P. R.
Nectria cinnabarina Tode ex Fr., on branches. Mass., Ohio.
N. offuscata Berk. & Curt., S. C.
Phomopsis hibisci Dearn., on twigs. N. Y.
P. malvacearum Westend. Md.
Phyllachora minuta P. Henn., black leaf spot. P. R.
Phyllosticta hibiscina Ell. & Ev., leaf spot, La.
P. syriaca Sacc., N. Y.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Physalospora fusca N. E. Stevens, on branches. Fla., T. H.
P. obtusa (Schw.) Cke., Fla.
Rosellinia bunodes Berk. & Br., root rot. P. R.
Sphaeropsis hibisci Cke. and S. lyndonvillae Sacc. (?Physalospora obtusa), on branches. N. Y.
Sphaerostilbe gracilipes Tul., on bark. S. C.
Stagonospora collapsa (Cke. & Ell.) Sacc., on twigs. Pa.
Xylaria sp., wilt, root disease. T. H.
Mosaic, suspected virus. Fla.

HIPPOCRATEA (HIPPOCRATEACEAE)

HIPPOCRATEA OBTUSIFOLIA Roxb., twining shrub of tropical America.

Asterina hippocrateae Ryan, black spot. P. R.
Asterinella hippeastri Ryan, black spot. P. R.
Botryorhiza hippocrateae Whetzel & Olive, rust (III). P. R.

HIPPOCRATEA--Continued

Microthyrium hippocrateae (Ryan) Toro, black spot. P. R.
Phytomonas tumefaciens (EFS. & Town.) Bergey, crown gall. Fla.

HIPPOMANE (EUPHORBIACEAE)

HIPPOMANE MANCINELLA L., MANCHINEEL. Small tree of Florida Keys and West Indies.

Ganoderma pulverulentum Murr.
Meliola hippomaneae F. L. Stevens, black mildew. Canal Zone.

HIRTELLA (ROSACEAE)

HIRTELLA TRIANDRA Sw. Shrub or small tree of tropical America

Asterina inaequalis Mont. var. nodulosa Speg., black spot. P. R.

HOFFMANSEGGIA (LEGUMINOSAE)

HOFFMANSEGGIA OXYCARPA Benth. Dryland shrub of Southwest.

Ravenelia hoffmanseggiae Long, rust (II). Texas.

HOLODISCUS (ROSACEAE)

HOLODISCUS spp. Especially H. DISCOLOR (Pursh.) Maxim, OCEAN SPRAY, ROCK-SPIREA, deciduous flowering shrub of Growth Regions 1, 2, 4, 5, 12, planted for ornament. H. DUMOSUS (Nutt.) Heller occurs in Growth Regions 9, 10, 11, 13, 14

Cylindrosporium ariaefolium Ell. & Ev., leaf spot. Oreg.
C. filipendulae Thuem., Wash.
Diplodia holodisci Barth. (?D. mutila (Fr.) Mont.) on branches. Wash.
Leptosphaeria sambuci Fautr., on branches. Wash.
Nectria cinnabarina Tode ex Fr., coral spot, twig canker. Wash.
Phyllactinia corylea Pers. ex Karst., powdery mildew. Wash.
Podosphaera oxyacanthi (DC.) DBy., powdery mildew. Idaho.
Rhapalidium cercosporelloidis Dearn., leaf spot. Idaho.
Septogloeum schizonoti Dearn. leaf spot. Wash.
Valsa ceratophora Tul. and V. clavigera Dearn. & Barth., on branches.
Witches'-broom, Holodiscus virus 1 (Zeller) Smith, Nanus holodisci Holmes. Oreg., Wash.

HUDSONIA (CISTACEAE)

HUDSONIA spp., BEACH-HEATHER. Small evergreen shrubs of eastern N. America, sometimes planted for ornament.

Cucurbitaria coremae Ell. & Ev., on stems. N. J.
Gnomonia sp. (Diaporthe conradii Ell.), on stems. N. J.

HURA (EUPHORBIACEAE)

HURA CREPITANS L., SANDBOX-TREE. Small tree of tropical America, sometimes planted for ornament.

Cercospora hurae F. L. Stevens, leaf spot. P. R.
Colletotrichum curvisetum F. L. Stevens, leaf spot. P. R.

HYDRANGEA (SAXIFRAGACEAE)

HYDRANGEA ARBORESCENS L., SMOOTH HYDRANGEA, and other native spp. Deciduous flowering shrub of Growth Regions 22, 24, 25, 27, 28, 29, 30.

Cercospora arborescentis Tehon & Daniels, leaf spot. Ill., Okla.
Cytospora sphaerocephala (Schw.) M. A. Curtis, on branches. W. Va.
Diaporthe eres Nit. (D. hydrangeae Ell. & Ev.), on dead branches. W. Va.
Erysiphe polygoni DC., powdery mildew. Md., W. Va.
Leptosphaeria vagabunda Sacc., on branches. W. Va.
Phyllosticta hydrangeae Ell. & Ev., leaf spot. Ind.
Phytomonas solanacearum (EFS.) Bergey, bacterial wilt. N. Y.
Pucciniastrum hydrangeae (Bork. & Curt.) Arth., rust (II, III). Pa. to N. C., Ark. and Ill. (O and I on Tsuga canadensis and T. caroliniana.)

HYDRANGEA OPULOIDES K. Koch (H. hortensia DC., H. macrophylla (Thunb.) DC., Hortensia opuloides Lam.), HOUSE HYDRANGEA, HORTENSIA. Flowering shrub of Japan, cult. in numerous horticultural vars. in open in Zone VI and southward, and commonly in greenhouses.

Ascochyta hydrangeae Arnaud, leaf spot. N. J.
Botrytis cinerea Pers., gray mold blight. Cosmopolitan.
Cercospora sp. (?C. hydrangeae Ell. & Ev.), leaf spot. Fla., Md., P. R.
Colletotrichum sp., leaf spot. Md. N. J.
Ditylenchus dipsaci (Kühn) Filip., stem nematode disease.
Erysiphe polygoni DC., powdery mildew. Ohio.

HYDRANGEA--Continued

Gloeosporium sp., leaf spot. P. R.
Oidium sp. (probably Erysiphe polygoni), powdery mildew. Md., Pa., Va.
Phyllosticta hydrangeae Ell. & Ev., leaf spot. Del., N. J.
Chlorosis,--physiogenic, often iron deficiency or excess lime.

HYDRANGEA PANICULATA Sieb., PANICLE HYDRANGEA. Shrub or small tree of China and Japan, cult. in Zone IV. The PEEGEE HYDRANGEA (H. P. var. GRANDIFLORA Sieb.) is the most widely cult. type. H. PETIOLARIS Sieb. & Zucc., CLIMBING HYDRANGEA, and HYDRANGEA sp. indet. are included here.

Ascochyta hydrangeae Arnaud, leaf spot. Alaska, N. J.
Botrytis cinerea Pers., gray mold blight. Cosmopolitan.
Cercospora hydrangeae Ell. & Ev., leaf spot. Ala.
C. hydrangeana Tharp, Va. to Ala. and Texas.
Cytospora sphaerocephala (Schw.) Sacc., on branches. S. C.
Erysiphe polygoni DC., powdery mildew. General.
Hendersonia hydrangeae Fairm., on branches. N. Y.
Heterodera marioni (Cornu) Goodey, Miss., Okla. Texas.
Nectria cinnabarina Tode ex Fr., on branches. Va.
Phyllosticta hydrangeae Ell. & Ev., leaf spot. Widespread.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Polyporus versicolor L. ex Fr., wound rot. Conn., Md., Iowa.
Pucciniastrum hydrangeae (Berk. & Curt.) Arth., rust. Md., Pa.
Sclerotium rolfsii Sacc., Southern blight. Fla.
Septoria hydrangeae Bizz., leaf spot. Conn., Miss., Ohio.
Venturia anthophila Pass., on inflorescences. Md.

HYMENAEA (LEGUMINOSAE)

HYMENAEA COURBARIL L., WEST INDIAN LOCUST. Forest tree of tropical America.

Irenina hymenaeicola (Frag. & Cif.) F. L. Stevens, black mildew. P. R.
Uredo hymenaeae Mayor, rust (II). P. R.

HYMENOCLEA (COMPOSITAE)

HYMENOCLEA sp., BURROBUSH. Shrub of southwestern U. S.

Puccinia splendens Vize, rust (0, I, II, III). Texas to Utah and Calif.

POTATO SEED-SOURCE CONTROL SUGGESTED FOR ELIMINATION OF LATE BLIGHT IN LOWER RIO GRANDE VALLEY

G. H. Godfrey

The early spring of 1941 was unusually favorable for late blight in the spring potato crop in the Lower Rio Grande Valley of Texas. Rainfall was over 8-1/2 inches above normal for the first 3 months of the year. Fifty-eight percent of these 90 days were officially listed as cloudy, and 28 percent as partly cloudy. Temperatures showed an accumulated departure of -7.2° F. in the means for the 3 months. As further evidence of favorable conditions for blight, downy mildews occurred in abundance on a number of crop plants, notably cabbage, curly mustard, and pepper, and on a large number of weeds. In spite of this, up until the latter part of March when potato harvest usually begins, late blight did not occur. The logical explanation of this would be absence of a source of infection. By far the majority of potatoes grown in the Valley, Bliss Triumph almost exclusively, are Nebraska- and North Dakota-grown certified seed; and except for rare occurrence in one small section of North Dakota, the records show these States to be free from late blight.

On March 27 a farmer noted severe blighting of foliage in a field of potatoes near his own, and upon investigation the trouble was found to be a well established case of late blight. This field was grown from a car of non-certified seed shipped from New York. The interested farmer at once looked into his own fields, aggregating well over a hundred acres, and found general early infection present throughout.

The writer did not learn of the outbreak of blight until March 31. By this time the disease had increased tremendously in the field from eastern seed and in the adjacent fields from certified Nebraska seed as well, with large areas completely black and every plant showing some leaf infection. Fortunately the crop was nearly made, and only the latest plantings will show reduced yields. The isolated area in which the disease occurred on these 2 farms is in a bend of the Rio Grande River about 15 miles above Brownsville, and about 5 miles distant from the nearest potato field of another grower. This nearest field and several others between there and Brownsville were completely free from the disease. Nebraska Bliss Triumph from the same source as that in the affected field, grown elsewhere in the Valley, was entirely free, even in the Los Fresnos area where the severe blight epiphytotics of 1937 and 1938 occurred. On April 4 very recent mild infection became evident, just south of Weslaco in a field in the direct line of the prevailing wind about 15 miles leeward of the spot of original infection. More recently it has spread to other fields. It seems quite certain that in these instances the original source of the disease was the eastern-grown seed.

Without complete information as to sources of seed in previous blight years, this much is known: -- that in 1937 a field of Maine-grown

potatoes first showed the disease, and that a continuation of the same field with Colorado stock developed blight later, in rapidly increasing "waves" extending from the Maine-seed portion. Thereafter, infection became general throughout the Los Fresnos area. Both 1939 and 1940 were completely free from late blight in the entire Lower Valley potato area. Both years were unfavorable for blight, with dry conditions prevailing during the sprouting and early growth periods, and during most of the season subsequently.

This detailed information is reported preliminary to a suggestion of a method whereby late blight might be eliminated as a factor in potato production in the Lower Rio Grande Valley -- viz: the rigid elimination of all seed except that from blight-free regions. An initial source of infection is absolutely essential to the development of the disease. It is not to be expected that the organism responsible for the disease, Phytophthora infestans, definitely a low-temperature loving fungus, could survive in the soil through a sub-tropical summer except possibly in infected tubers that escaped harvest. No native hosts have been found in this vicinity upon which it could survive from season to season. Long distance wind transmission -- from Louisiana or Florida -- is a remote possibility. Each new outbreak of the disease, in this section, probably originates with Phytophthora-infected seed potatoes. Elimination of its introduction by this means might prevent the disease. A movement is under way, on the part of informed growers in the Valley, to bring about this desirable protective measure.

(Lower Rio Grande Valley Substation, Texas Agricultural Experiment Station.)

OVERWINTERING OF BACTERIAL SPOT ON PEACH

H. H. Thornberry and H. W. Anderson

Overwintering of Phytomonas pruni (Smith) Bergey et al. in peach twigs[1], primary foliage infections originating from the inoculum in spring cankers[1], and the probable occurrence of twig infections remaining dormant from fall until spring[1] are further supported by an observation of April 28. At Villa Ridge in the Cairo area of Illinois, spring cankers were found with primary foliage infection on the older leaves immediately below the cankers. Secondary or general foliage infections were not observed. At Carbondale, 50 miles north, and at Irvington, 110 miles north of Cairo, spring cankers and primary foliage infections immediately below the cankers were seen. At Olney, 140 miles north and 60 miles east of Cairo, only spring cankers were found. At Urbana, 240 miles north, neither spring cankers nor primary foliage infections were evident. At the five locations peaches were 5, 3, 2, 2, and 1 millimeters in diameter respectively.

Spring cankers that develop on the past season's shoots, arising when the temperature in spring permits growth of the tissues and bacteria,

[1] H. H. Thornberry, and H. W. Anderson. Overwintering of Phytomonas pruni on peach. Phytopathology 23:787-801. 1933.

have been consistently found to be the source of inoculum for primary foliage infections under Illinois conditions for the past 10 years. Since the primary foliage infections have been utilized to a great extent in locating spring cankers, other sources of primary foliage infection probably would have been found if present. Spring cankers, owing to their scarcity on most peach trees and their inconspicuousness, are for the most part difficult to find. They occur most generally on the distal third of watersprouts that arise from the trunk or the main branches of the trees, but occasionally may be found on the terminal shoot of ordinary branches. Young trees that have made excessive growth the previous season are likely to have from 1 to about 5 cankers per tree provided the disease was severe on the current foliage. In most mature orchards random observation does not reveal spring cankers. Considerable time is saved by observing trees that have made excessive twig growth and watersprouts in areas known to have severe foliage infection the previous year. In a Villa Ridge orchard on an area previously occupied by a clover hay feeding stack, the spring cankers and foliage infections are annually present while the remaining trees in the orchard usually are free from foliage infection through the year. Anyone interested in verifying these observations might profit by previously locating during the summer months vigorously growing trees for examination the next spring from 2 to 4 weeks after full blossom and appearance of foliage.

The suggestion[1/] that infections for these spring cankers may occur in the fall before leaf fall and while the shoots contain stomates and green tissues is supported by the detailed information presented in a Doctor's thesis by Howard W. Larsh. Twigs from a highly susceptible peach (Chinese seedling growing in the University Orchard, Olney, Illinois), collected during the dormant season and kept in the laboratory under favorable temperature and moisture conditions, developed typical spring cankers that were verified by isolations and inoculations.

(Department of Horticulture, University of Illinois.)

WEATHER AND PLANT DISEASES IN OKLAHOMA

K. Starr Chester

The vagaries of the 1940-41 season have resulted in unusual pathological conditions in Oklahoma.

Following a relatively mild summer, warm weather continued to November 12, at which time the temperatures dropped to 7° F. and continued at that low level for several days. Perennial vegetation, for the most part, had not become dormant. Apart from this freeze the winter months were warmer than usual, and there was abundant moisture until the first of March.

Rusts and other diseases of small grains: As pointed out in an earlier number of the "Plant Disease Reporter," leaf rust [Puccinia rubigo-vera tritici] of wheat survived the winter and by March 1 was quite prevalent over the State, particularly in the important west central area about Enid. So far as we can determine, crown rust of oats and stem rust of oats and wheat disappeared from the State shortly after the November freeze. March was unusually dry, and by the first of April wheat leaf rust was so reduced in amount that it appeared as though the disease no longer had the menacing appearance of a month previously. Since the first of April, Oklahoma has been subject to a most unusual period of wet weather. More than half the days in April were cloudy or rainy, and we have had rain every day thus far in May. The rains have been rather general over the State and have been coupled with cool temperatures.

This sequence of phenological factors has resulted in a State-wide epiphytotic of speckled leaf blotch (Septoria tritici Desm.).. The disease is always present in early spring and can be collected in any field on the lower dead leaves of the rosettes. This year the fungus advanced up the wheat stems, regularly killing 40 to 60 percent of the entire complement of leaves.

I have just returned from an inspection trip, passing through Stillwater, Chickasha, Lawton, El Reno, Enid, and Perry. Some 50 wheat fields were sampled. The Septoria infection had resulted in destruction of about half the foliage in every field examined. In the Lawton area (southwest) leaf rust had become epiphytotic on the remaining 2 or 3 upper leaves at about heading time, but from Chickasha northward leaf rust was surprisingly scarce, many fields showing only a trace of infection. Most of the wheat was in the late boot stage, and with 2 or 3 healthy upper leaves at this time it appears doubtful if leaf rust will become a major factor in this year's production.

No evidence of stem rust was found on the entire trip. Septoria leaf diseases were present but not seriously injurious on barley and rye, and were also collected on the grasses Bromus secalinus and B. commutatus.

A small amount of anthracnose [Colletotrichum graminicola] was found on oats. On the whole, oats, barley, and rye were remarkably free from disease. In a few fields leaf rust of rye was abundant but not seriously injuring the plants. In one of these fields the rye rust was heavily parasitized by Darluca filum. Barley leaf rust [P. anomala] was only occasionally found, and crown rust [P. coronata] of oats was present only in traces.

Sales of smut-control dusts more than doubled in Oklahoma in the past year as compared with 1939, and this was correlated with a greater freedom from smut in oats and barley than is customarily seen in inspection trips over this area.

Powdery mildew (Erysiphe graminis DC.) was frequently present on wheat and barley but only one instance of severe infection was found,

that on spring planted barley at the Lawton Field Station. The small grains have developed remarkably well and have made good use of the abundant moisture.

From the pathological point of view, lodging, because of rank development, is the only factor which is likely to have a serious effect on this year's crops, except in the southwestern counties where the combination of speckled leaf blotch and leaf rust will be recognizably injurious.

Injury to trees and shrubs from the November freeze: The November freeze produced very widespread injuries to trees and shrubs. Many were killed outright, but a large proportion of the injured plants leaved out and blossomed as in a normal season; however, the tissues beneath the bark in the main trunks a foot or two from the ground had been destroyed, and we are now receiving many reports of trees and shrubs suddenly dying after apparently normal spring development. In each case the freeze appears to be responsible, and the trunk injury is as described. Peach and apple trees, Chinese elms, and roses have suffered particularly, especially those in the more sheltered locations.

Outbreaks of some usually inconspicuous diseases: The abundant moisture of the last 5 weeks has also produced outbreaks of a number of diseases that are normally absent, or nearly so, in this area. Downy mildews have been very prevalent, particularly those of alfalfa (Peronospora trifoliorum), Bermuda grass (Sclerospora farlowii, according to recent correspondence with William H. Weston), crucifers (Peronospora parasitica), wild geranium (Peronospora geranii) and corydalis (Peronospora corydalis). Anthracnose of sycamore (Gnomonia veneta) is epiphytotic, with trees seriously affected in many parts of the state.

(Department of Botany and Plant Pathology, Oklahoma Agricultural and Mechanical College.)

WHEAT CONDITION IN KANSAS

C. O. Johnston

Thus far the spring of 1941 in most of Kansas has been more nearly normal than any spring in recent years. Except for a brief cold wave and heavy snow in the western third of the State on April 20, temperatures have been moderate and the weather mild and springlike. Rainfall has been well distributed and near or slightly above normal.

Under these conditions winter wheat has made a remarkable growth and for the first time in several years the plants are deeply rooted in nearly all parts of the State. The only area of severe wind damage is in the extreme southwestern part of the State. The freeze of April 20 did little damage except in the northwestern part. There are small areas in

northcentral and northeastern Kansas where winterkilling was severe and much wheatland has been plowed and sown to oats. The total acreage of these damaged areas appears very small in view of the vast acreage of excellent wheat in the State as a whole. Top growth of wheat is about normal in most parts, except for some short wheat in southcentral counties and some excess top development in the river valleys of northern Kansas.

Leaf rust is widely distributed in the State, collections having been made in western as well as central and eastern Kansas; nearly all infections so far observed are in the first or second generation and are on leaves near the ground indicating their origin from overwintered uredia. No stem rust has been observed as yet.

Powdery mildew is abundant on winter wheat in many parts of the State. In the vicinity of Manhattan the infection is the heaviest the writer ever has seen. Top growth in many fields is heavy and there is much lodging, especially in low spots. Mildew is so heavy in some places that severe yellowing of the plants and loss of leaves have resulted. Even on upland wheat in this locality mildew is unusually abundant on the lower leaf sheaths and leaves. In the rust nursery at Manhattan, mildew is so severe that it will be a serious hindrance to rust work. There are sharp differences in varietal response, however, and it is notable that many rust-resistant hybrid lines involving Hope wheat are nearly free from infection.

There also is a moderate amount of yellow mosaic in winter wheat in the rust nursery as well as some in commercial fields in northcentral Kansas. Septoria tritici also was fairly abundant early in the spring but now is being masked by mildew.

(Cereal Courier 33:38-39. April 25.)

ADDITIONAL REPORTS ON DISEASES OF CEREALS

TEXAS: Weather conditions during April have continued unfavorable for small grains. Total precipitation amounted to 4.59 inches which is only .91 inch above normal but which was received in small showers so that field work was impossible. Precipitation was recorded on 20 days during the month. Rain or heavy dew was recorded on all but 2 days. Temperatures have been approximately normal with below normal fluctations in extremes. Maximum temperature was 86° F. and minimum was 41° F. Mean maximum temperature was below normal and mean minimum temperature slightly above normal. Sixteen days were cloudy and 6 more partly cloudly.

It would seem that the above conditions would be ideal for spread of rust but such has not been the case. Leaf rust of wheat has spread slowly. Crown rust of oats was found on April 11 but until the last few days only slight increase in the disease has been noted. Stem rust of

wheat was found near Dallas, Texas on April 21 and on the station on April 25. In the last 2 days stem rust has appeared in all the plantings and is so well distributed that rapid increase may be expected from now on.

(I. M. Atkins, April 30. Division of Cereal Crops and Diseases.)

NEBRASKA: Specimens of leaf rust of wheat were brought in by Dr. Quisenberry on April 22, which is the earliest it has been reported in the last five yearsin this state. Septoria tritici on wheat was observed on April 28 in wheat fields near Lincoln. Bacterial blight of oats appeared to be causing some damage in Jefferson County on April 28.

(J. E. Livingston, Extension Plant Pathologist, May 1.)

CALIFORNIA: The total rainfall since March 29 has been 5.17 inches. On many farms barley is a complete failure. So much rain in a normally dry country is very disturbing. The total precipitation at Davis is now 28.87 inches, which is more than in any previous season since cooperative experiments were begun in 1922, and quite different from the seasonal total of only 6.67 inches in 1933.

Wheat and oats, which are minor crops in the immediate vicinity, have endured the wet winter much better than has barley. In Yolo and Solano Counties it appears that 40 percent of the barley acreage was planted late from March 10 to 28, and much of this represented replanting. Late barley is always uncertain, but it looks more promising than other barley now.

A very severe epidemic of crown rust has developed. Wild oat plants along the railroads and highways are nearly all defoliated and plants in the fields probably soon will be likewise. Other rusts have made very little progress locally, although stem rust on wheat is reported as moderately severe in Imperial Valley. Net blotch [Helminthosporium teres] on barley is unusually severe. Two fields of Atlas barley observed yesterday near Dixon had 80 percent of their leaf surface destroyed by this disease.

(C. A. Suneson, April 12, Cereal Courier 33:42. April 25.)

DISEASES NEWLY RECORDED FROM VARIOUS LOCALITIES

FUSICOCCUM CANKER ON PEACH IN MASSACHUSETTS: In the spring of 1940, an unusual peach canker was observed in an orchard in Bristol County. The report at the Philadelphia meetings of Haenseler and Daines on "Peach Canker caused by Fusicoccum amygdali", suggested that disease might be concerned in this case. On April 4, 1941 specimens of the disease were taken from the Bristol County orchard and sent to Haenseler and Daines for diagnosis. Dr. Haenseler confirmed the suspicion, and stated

that apparently we have the same disease complex as is present in New Jersey, namely, Fusicoccum bud cankers acting alone or followed by Valsa which hastens the girdling and death of the branches. (O. C. Boyd, Massachusetts State College.)

FLAX ANTHRACNOSE IN CALIFORNIA: Flax anthracnose, Colletotrichum lini, was found in California for the first time in March, 1941. Its widespread occurrence throughout the principal flax growing areas of the State indicated that it had undoubtedly been present to some extent on flax crops of previous years.

Shortly after the discovery of the presence of the disease a survey of a large number of fields was made, and the disease was found to be of quite general occurrence. It was severely affecting the earlier maturing fields by producing almost complete defoliation, stem girdling by multiple infections, and an abundance of capsule lesions. The latter type infection resulted in mycelial invasion of ovary walls and seed coats of seeds in the older capsules and complete death and collapse of the young capsules. There was little damage to the upper portions of the plants in the later maturing fields, but lesions could be found on the stems of nearly all plants.

The epiphytotic was undoubtedly accentuated by the excessive rainfall during late winter and early spring. The plants were subjected to high humidities for long periods of time during which moderate temperates prevailed. In many fields lodging of the plants brought about by heavy rains and winds during the green capsule stage was an additional factor in increasing the activity of the disease. The yield of the early planted flax in the San Joaquin Valley will be materially reduced. (B. R. Houston, Junior Plant Pathologist, California Agricultural Experiment Station.)

VERTICILLIUM WILT OF PEPPERMINT AND VIBURNUM IN INDIANA: Peppermint wilt.--A 20-acre field of peppermint was severely infected with wilt and root rot near Bremen, Indiana, in 1940. The field had been planted to peppermint for a number of years. A Verticillium, apparently similar to Verticillium albo-atrum, was isolated from infected roots. This is the first report in Indiana of this disease, which has been recognized in Michigan for a number of years.

Viburnum wilt.--Die-back and wilt of Viburnum lantana occurred at Lafayette, Indiana, in 1940. The xylem of infected branches was discolored and Verticillium albo-atrum isolated. (R. C. Baines, Purdue University Agricultural Experiment Station.)

BRIEF NOTES ON PLANT DISEASES

APPLE SCAB DEVELOPMENT IN INDIANA: Apple scab ascospores were mature in southern and central Indiana when the apple buds were in the green tip stage in 1941. Ascospores were discharged during rains on

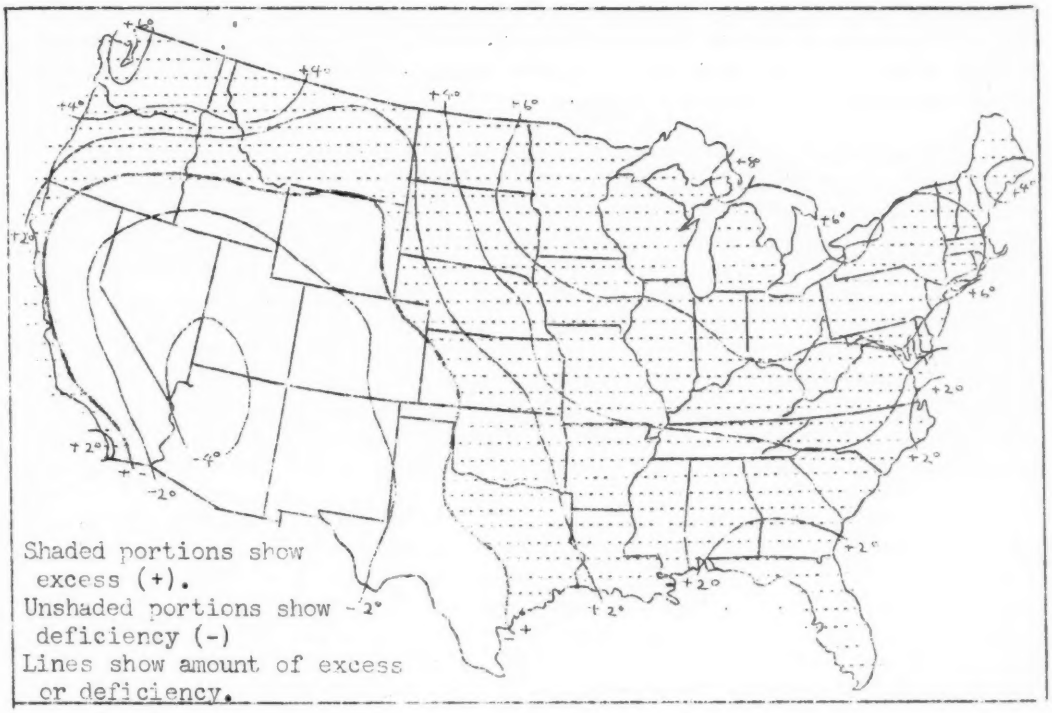

Fig. 1--Departure of Mean Temperature from Normal for April 1941

April 16 and 18, at which time the apple buds were in the pink stage in southern Indiana and in the prepink stage in central Indiana. This is the ninth successive spring that ascospores have been mature before or when the apple trees were in the delayed dormant stage of development. (R. C. Baines, Purdue University Agricultural Experiment Station.)

APRIL WEATHER 1941

(From U. S. Department of Commerce Weather Bureau Weekly Weather and Crop Bulletin for week ending May 6,, 1941.)

In general, April was warm and dry in the Eastern States, cool and wet in the Southwest, and warm and dry in the Pacific Northwest. Figure I shows that the mean temperature for the month was above normal in all sections from the Great Plains eastward and in the Pacific Northwest and Pacific coast sections. In most of the Southeast the monthly mean temperatures were from 2° to 3° above normal, but they ranged from 5° to as many as 8° above average in most of the Middle Atlantic States, the Ohio and upper Mississippi Valleys, and the Lake region. In the Pacific Northwest temperatures ranged from 4° to 6° above the seasonal average, while

along the Pacific coast they were slightly above normal. In the Great Basin, the central Rocky Mountain area, and the Southwest, temperatures ranged from 2° to as many as 5° below normal, the coolest weather centering in Arizona and southern Utah.

Precipitation during April was rather erratic, with contiguous areas showing extreme variations in relation to normal. For example, on the east Texas coast precipitation ranged from 2 to 4 times the normal amount, but adjacent areas of Louisiana had only about half to two-thirds the normal. In most Eastern States, with the exception of rather local areas in central and southern Florida, eastern North Carolina, and other restricted localities the month was considerably drier than usual. In most of the Ohio Valley the monthly precipitation was less than 75 percent of normal, with some localities having less than half the usual amount. Most of New England and northern New York were also unusually dry, as well as a considerable area of the extreme Southeast, embracing southern Georgia, southern Alabama, and parts of southern South Carolina.

In the extreme North east the total precipitation during April was the lowest of record for this month at Eastport and Portland, Maine, Concord, N. H., and Canton, N. Y.; it was the second lowest at Burlington, Vt., and Oswego, N. Y., and the third lowest at Northfield, Vt. In addition to the eastern dry area, there were local regions below normal, principally in the upper Mississippi Valley, parts of the southern Great Plains, and the Pacific Northwest; in the latter area less than half the normal amount occurred at three stations.

In marked contrast to the dry weather, much of the country from the central Mississippi Valley westward and southwestward reported falls in excess of normal, and a large area of the Southwest had totals ranging from 2 to as many as 4 times the usual precipitation. The eastern Texas coast also had extremely heavy amounts, while central and southern Florida reported from 2 to 10 times the usual April rainfall. Key West, Fla., reported 13.14 inches for April, which was by far the greatest amount for this month at that station, exceeding the previous record by nearly 6 inches.

RAIN NEEDED IN MOST OF EAST: Although growing crops continued to make fairly good progress in most sections east of the Mississippi River, there is a widespread need of rain in most States. While conditions have not yet approached serious proportions generally, there are certain localities that are in urgent need of moisture, especially in the Southeast where April was quite dry and in the eastern Ohio Valley. In these areas rain is needed quite badly for preparation of the soil and germination of crops that have been seeded, while in the latter area it is necessary to haul water in the drier districts.

In marked contrast to the eastern dry section, there was too much rain in many parts of the country from Nebraska southward over Texas, including portions of Louisiana and Arkansas. In these localities the soil is generally too wet to work, with some crop damage indicated

and considerable soil erosion in southwestern Oklahoma where washing and flooding rains occurred. In general, in this area warm, sunny weather is urgently needed.

In more northern portions of the country from the western Lake region westward the soil moisture situation is quite favorable, with recent showers and light to moderate rains especially favorable. Spring work made rapid advance, with some spring seeding nearing completion. In the northern Rocky Mountain area precipitation was favorable, especially in some areas of Wyoming where the water prospects continued to improve.

In the Southwest the moisture situation is generally satisfactory with sufficient irrigation water in all the upper Rio Grande district. In most Pacific coast sections showers and moderate to heavy rains were generally beneficial, except for some damage to cherries and cut hay in California, and retardation of fruit and truck development in Oregon.